



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,398	12/30/2003	Barrett E. Cole	H0004257 (1100.1225101)	7564
128 7590 01/22/2008 HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			EXAMINER MUI, CHRISTINE T	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 01/22/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/748,398

Applicant(s)

COLE ET AL.

Examiner

Christine T. Mui

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 38-63 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27-37 is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8,10,12,13,15,22 and 26 is/are rejected.
- 7) ☒ Claim(s) 3-6, 9, 11, 14, 16-21 and 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 23 October 2007, with respect to Claims 12 and 17-18 have been fully considered and are persuasive. The rejection of claims 12 and 17-18 under USC 112 has been withdrawn.

1. Applicant's arguments, see remarks, filed 23 October 2007, with respect to the rejection(s) of claim(s) 1-26 under USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US Publication No. 2003/0052281 to Rader et al and USP 7,057,712 to Beck et al that can be seen in the rejection below.

2. Applicant's arguments, see remarks, filed 23 October 2007, with respect to claims 27-34 have been fully considered and are persuasive. The rejection of claims 27-34 have been withdrawn.

Election/Restrictions

3. Claims 38-63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 23 October 2007.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 7-8, 10, 12-13, 22 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by US Publication No. 2003/0052281 to Rader et al (herein referred "Rader").

3. Regarding claim 1, the reference Rader discloses an aerosol lab-on-a-chip (ALOC) that integrates one or more of a variety of particle collection, concentration and characterization processes onto a single substrate or layer stack of such substrates. A UV laser diode laser light source on the substrate or substrate stack is mounted so that it is located downstream of the sample inlet port at a right angle to the sample particle stream. A UV light source illuminates individual particles in the stream to induce a fluorescence response in those particles having a fluorescent signature such as biological particles (see abstract).

4. Regarding claim 2, the reference Radar discloses mounting a UV laser diode light source on the substrate or a substrate stack the light can illuminate the particles in the stream. The particles that are collected are deposited onto a solid substrate or into

a liquid for the purposed of subsequent physical or chemical analysis (see abstract, [0005, 0013]). It is interpreted by the examiner that the stack of layered substrates where the particles are collected, is considered to be mounted. The topmost layer where the particles are collected is the collection surface and the stack portion is the mounted area beneath the surface.

5. Regarding claim 7, the reference Radar discloses that when the particles are collected on the substrate or stack of substrates or even liquid for the purposes of subsequent physical or chemical analysis, aerosol characterization is defined as the determination of the distribution of the size or shape, the chemical or biological composition or any physical or chemical property of the suspended particles comprising of aerosol (see [0005]).

6. Regarding claim 8, the reference Radar discloses that when the particles are collected on the substrate or stack of substrates, the particles are analyzed while they are suspended on the surface of the substrate (see [0005]). It is interpreted by the examiner that where the particles are suspended on the substrate is where the surface comprises of an adsorbate, where the aerosol particles are accumulated on the surface of a solid for the purposes of analysis.

7. Regarding claim 10, the reference Radar discloses a UV light source that illuminates the individual particle in the stream or on the substrate to induce a fluorescence response in those particles having a fluorescent signature such as biological particles (see abstract).

8. Regarding claims 12-13, the reference Radar disclose a UV laser diode laser light source that is mounted on the substrate or substrate stack so that is located downstream of the sample inlet port and at a right angle to the sample particle stream (see abstract). It is interpreted by the examiner that the angle the laser light source is mounted and positioned on the substrate to illuminate the aerosol particles is configured such that the detector is substantially blind to the reflective energy and such that the reflective energy from the energy source does not impinge upon the detector.

9. Regarding claim 22, the reference Radar discloses the instruments needed for the characterization of aerosol, the instruments must provide its own gas-handling, sensor, signal processing and data acquisition capabilities, although they are link to computers (see 0008)). It is interpreted by the examiner that the computer that the gas-handling, sensor, signal processing and data acquisition capabilities are connected to is a controller that controls the operation of the analyzer.

10. Regarding claim 26, the reference Radar discloses the aerosol inlet provides a path that admits the particle laden gas into the ALOC where flow handling devices such as channels and valves distribute and direct the flow or the particles on to the substrate (see 0030)). It is interpreted by the examiner that the flow handling device that include channels and valves selectively add chemicals to the surface for examination.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rader as applied to claim 1 above, and further in view of USP 7,057,712 to Beck et al (herein referred "Beck").

15. Regarding claim 15, the reference Radar discloses the claimed invention except for where the detector is sensitive to a plurality of wavelengths. Beck discloses a particle analyzing system with fluorescence detection where an emissive response

profile can be in the presence or absence of a fluorescence energy emission where a violet or UV light is emitted with a plurality of different wavelengths of fluorescence. Using several different UV or violet wavelengths used to excite a particle creates a profile that shows the emissive properties of the particle (see column 2, lines 37-53, Claim 53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the detector be sensitive to a plurality of wavelengths so that upon illuminating the detector with a light source, it will be reactive to not just one, but many wavelengths and will be able to characterize the sample under different conditions.

Allowable Subject Matter

16. Claims 3-6, 9, 11, 14, 16-21 and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. A particle analyzer for analyzing aerosol particles on a substrate that is thermally isolated as well as coupled to a temperature modifying means is not found in the prior art. Furthermore, a particle analyzer for analyzing aerosol particles on a substrate that comprises of carbon nanotubes and a particle analyzer with an energy source lens and a detection lens is not found in the prior art. Radar discloses using an aerodynamic lens to concentrate aerosol particles that are to be analyzed but not a lens for concentration the UV energy source and the detector. Also an analyzer to analyze

aerosol particle with a detector that comprises of plurality of pixels that are sensitive to a single or plurality of wavelengths.

18. Claims 27-37 are allowed.

19. A particle analyzer with a substrate and a collection surface comprising of carbon nanotube with a temperature adjusting means such as a heater coupled to the surface where it is thermally isolated and the surface is suspended over a cavity with legs is not found in prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine T. Mui whose telephone number is (571) 270-3243. The examiner can normally be reached on Monday-Friday 8-5; Alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/748,398
Art Unit: 1797

Page 9

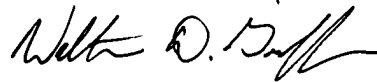
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTM

Application/Control Number:
10/748,398
Art Unit: 1797

Page 9

CTM

A handwritten signature in black ink, appearing to read "Walter D. Griffin". The signature is fluid and cursive, with a large initial "W" and a stylized "G".

WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER